Sessional Lecture 01

1. Program to count total digits in a given number (two methods: **1.cpp** & **2.cpp**)
2. Program to find reverse of any given number (two methods: **3.cpp** & **4.cpp**)
3. Program to check whether a number is palindrome or not (**5.cpp**)

Start here × 1.cpp ×

```cpp
/**
C++ Program to Count Total Digits in a Number
Date: September 7, 2022
**/
#include<iostream>
using namespace std;

int main()
{
    int n,digit = 0;
    cout << "Enter a number: ";
    cin >> n;
    while(n != 0)
    {
        n = n / 10;
        digit++;
    }
    cout << "Total digits: " << digit << endl;
    return 0;
}
```

C:\Users\User\Desktop\ABC\1.exe

```
Enter a number: 123456
Total digits: 6
```

Start here × 2.cpp ×

```cpp
/**
C++ Program to Count Total Digits in a Number
Date: September 7, 2022
**/
#include<iostream>
#include<cmath>
using namespace std;

int main()
{
    int n,digits;
    cout << "Enter a number: ";
    cin >> n;
        digits = log10(n) + 1;
    cout << "Total digits: " << digits << endl;
    return 0;
}
```

C:\Users\User\Desktop\ABC\1.exe

```
Enter a number: 123456
Total digits: 6
```

Start here | 3.cpp

```cpp
/**
C++ program to find reverse of any number
Date: September 7, 2022
**/
#include<iostream>
using namespace std;

int main()
{
    int n,rev,r;//rev: reverse & r: remainder
    cout << "Enter a number: ";
    cin >> n;
    while(n != 0)
    {
            r = n % 10;
            rev = (rev * 10) + r;
            n = n / 10;
    }
    cout << "Reverse number: " << rev << endl;
    return 0;
}
```

C:\Users\User\Desktop\ABC\3.exe

```
Enter a number: 123456
Reverse number: 654321
```

Start here | 4.cpp

```cpp
/**
C++ program to find reverse of any number
Date: September 7, 2022
**/
#include<iostream>
using namespace std;

int main()
{
    int n,r;//rev: reverse & r: remainder
    cout << "Enter a number: ";
    cin >> n;
    cout << "Reverse number: ";
    while(n != 0)
    {
            r = n % 10;
            cout << r;
            n = n / 10;
    }

    return 0;
}
```

C:\Users\User\Desktop\ABC\4

```
Enter a number: 123456
Reverse number: 654321
```

Palindrome

A palindrome is anything that reads the same backward and forward. In other words, after reversing any number, word or phrase if it remains the same as original then it is a palindrome.

Logic

To check whether a number is a palindrome number or not we have to reverse it first. After reversing it we compare the reversed number with the original number. If both the numbers are similar, then it means the number we have is a palindrome number

Start here ✕ 5.cpp ✕

```cpp
/**
C++ program to check whether a number is palindrome or not
Date: September 7, 2022
**/
#include<iostream>
using namespace std;

int main()
{
    int n,rev,r,temp;//rev: reverse & r: remainder
    cout << "Enter a number: ";
    cin >> n;
    temp = n;
    while(temp != 0)
    {
            r = temp % 10;
            rev = (rev * 10) + r;
            temp = temp / 10;
    }
    cout << "Reverse number: " << rev << endl;
    if(n == rev) cout << n << " is a palindrome number.\n";
    else cout << n << " is not a palindrome number.\n";
    return 0;
}
```

C:\Users\User\Desktop\ABC\4.exe

```
Enter a number: 121
Reverse number: 121
121 is a palindrome number.
```


References:

1. https://studyfied.com/program/cpp-basic/check-whether-a-number-is-palindrome-or-not
2. https://codescracker.com/cpp/program/cpp-count-digits-in-number.htm